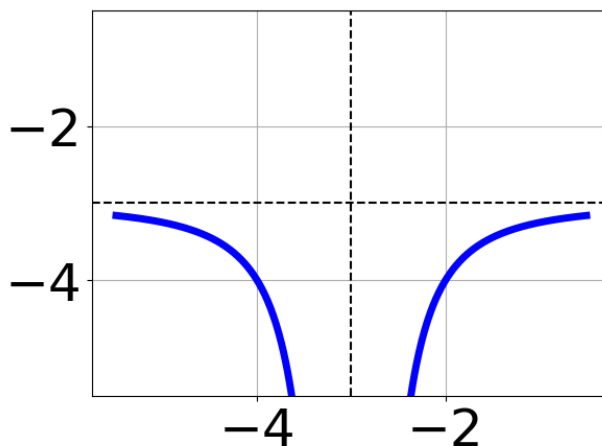1. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-56}{16x - 72} + 1 = \frac{-56}{16x - 72}$$
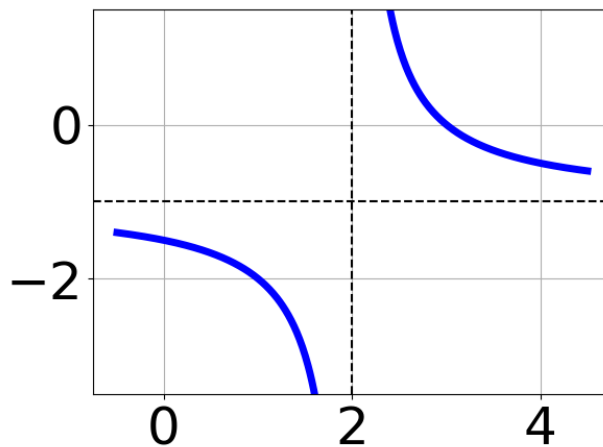
   A. $x_1 \in [-5.5, -1.5]$ and $x_2 \in [2.5, 5.5]$

   B. $x \in [-5.5, -1.5]$

   C. $x \in [3.5, 5.5]$

   D. $x_1 \in [4.5, 6.5]$ and $x_2 \in [2.5, 5.5]$

   E. All solutions lead to invalid or complex values in the equation.

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2. Choose the equation of the function graphed below.

   A. $f(x) = \dfrac{1}{x - 3} - 3$

   B. $f(x) = \dfrac{1}{(x - 3)^2} - 3$

   C. $f(x) = \dfrac{-1}{x + 3} - 3$

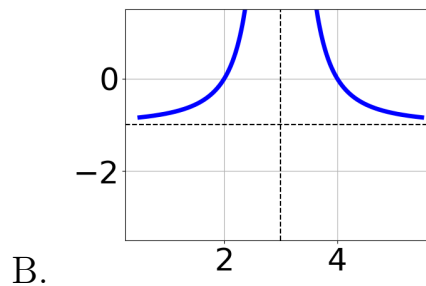   D. $f(x) = \dfrac{-1}{(x + 3)^2} - 3$
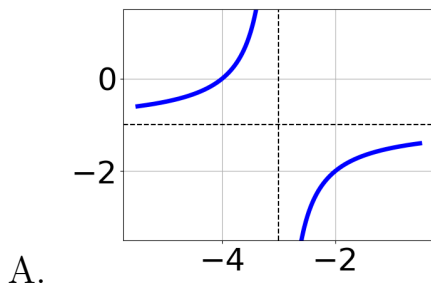
   E. None of the above

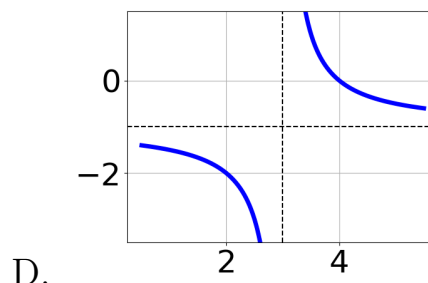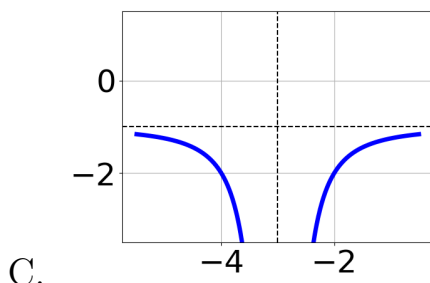3. Choose the equation of the function graphed below.

A. $f(x) = \dfrac{1}{x-2} - 1$

B. $f(x) = \dfrac{1}{(x-2)^2} - 1$

C. $f(x) = \dfrac{-1}{(x+2)^2} - 1$

D. $f(x) = \dfrac{-1}{x+2} - 1$

E. None of the above

4. Choose the graph of the equation below.

$$f(x) = \dfrac{1}{(x+3)^2} - 1$$

A.

B.

C.

D.

E. None of the above.

---

5. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-4x}{7x+6} + \frac{-6x^2}{35x^2 - 19x - 42} = \frac{-6}{5x - 7}$$

A. $x \in [1.53, 3.65]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [0.6, 1.53]$

D. $x_1 \in [-1.34, -0.34]$ and $x_2 \in [-3, 2.7]$

E. $x_1 \in [-1.34, -0.34]$ and $x_2 \in [3, 6.7]$

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6. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{4x}{4x+7} + \frac{-2x^2}{-8x^2 + 14x + 49} = \frac{2}{-2x + 7}$$

A. $x_1 \in [2.28, 3.46]$ and $x_2 \in [-2, 3]$

B. $x \in [-2.84, -0.99]$

C. $x \in [2.68, 4.19]$

D. $x_1 \in [-2.84, -0.99]$ and $x_2 \in [1.5, 6.5]$

E. All solutions lead to invalid or complex values in the equation.

7. Determine the domain of the function below.

$$f(x) = \frac{6}{16x^2 + 40x + 24}$$

A. All Real numbers except $x = a$, where $a \in [-1.67, -1.4]$

B. All Real numbers except $x = a$ and $x = b$, where $a \in [-24.11, -23.87]$ and b
$[-16.78, -15.56]$

C. All Real numbers except $x = a$, where $a \in [-24.11, -23.87]$

D. All Real numbers.

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-1.67, -1.4]$ and $b \in$
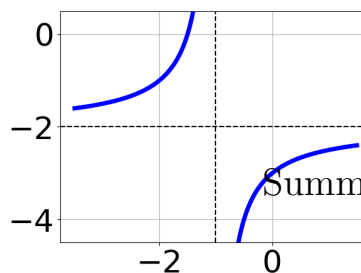$[-1.32, -0.74]$

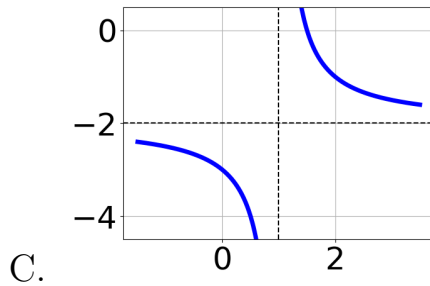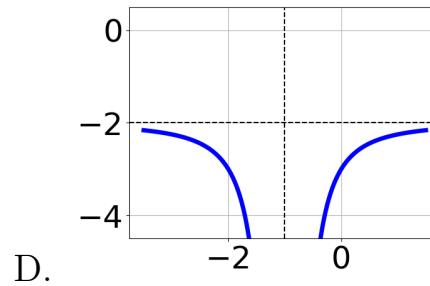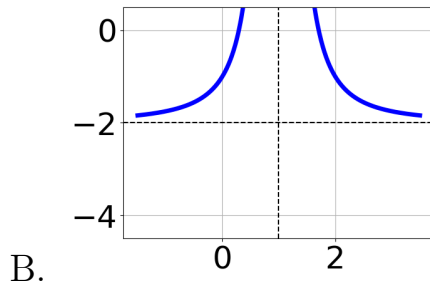8. Determine the domain of the function below.

$$f(x) = \frac{6}{16x^2 + 8x - 15}$$

A. All Real numbers except $x = a$, where $a \in [-23, -19]$

B. All Real numbers.

C. All Real numbers except $x = a$, where $a \in [-4.25, -0.25]$

D. All Real numbers except $x = a$ and $x = b$, where $a \in [-23, -19]$ and $b \in$
$[12, 13]$

E. All Real numbers except $x = a$ and $x = b$, where $a \in [-4.25, -0.25]$ and $b \in$
$[0.75, 2.75]$

9. Choose the graph of the equation below.

$$f(x) = \frac{-1}{x - 1} + 2$$

A.

B.

D.

C.

E. None of the above.

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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{108}{72x - 36} + 1 = \frac{108}{72x - 36}$$

A. $x \in [-0.9, -0.2]$

B. $x_1 \in [-0.9, -0.2]$ and $x_2 \in [-0.5, 2.5]$

C. $x \in [0.5, 2.5]$

D. $x_1 \in [0.2, 1.1]$ and $x_2 \in [-0.5, 2.5]$

E. All solutions lead to invalid or complex values in the equation.